

### **Remarks**

Claims 17-19 are pending. Early favorable consideration is respectfully requested.

Responsive to the restriction requirement dated October 1, 2003, Applicants hereby provisionally elect the species of octakis(aminophenyl)silsesquioxane, with traverse. The claims which read on the provisionally elected species are claims 17-37.

It is respectfully submitted that the election of species requirement is in error. 37 C.F.R. § 1.475(d) and (e) read as follows:

(d) If multiple products, processes of manufacture or uses are claimed, the first invention of the category first mentioned in the claims of the application and the first recited invention of each of the other categories related thereto will be considered as the main invention in the claims, see PCT Article 17(3)(a) and § 1.476(c).

(e) The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.

In this case, claim 1 is the first invention of the composition category of claims 17 inclusive of claim 19, and the compounds of claim 19 are claimed as alternatives within a single claim.

The International Preliminary Examination Report further found that the claims met the unity of invention requirements of the PCT. The election of species requirement further is in conflict with MPEP § 1850:

Unity of invention has to be considered in the first place only in relation to the independent claims in an international application and not the dependent claims. By “dependent” claim is meant a claim which contains all the features of another claim and is in the same category of claim as that other claim (the

expression “category of claim’ referring to the classification of claims according to the subject matter of the invention claimed, for example, product, process, use or apparatus or means, etc.).

If the independent claims avoid the prior art and satisfy the requirement of unity of invention, no problem of lack of unity arises in respect of any claims that depend on the independent claims. In particular, it does not matter if a dependent claim itself contains a further invention. Equally, no problem arises in the case of a genus/species situation where the genus claim avoids the prior art. Moreover, no problem arises in the case of a combination/subcombination situation where the subcombination claim avoids the prior art and the combination claim includes all the features of the subcombination. (Emphasis added.)

Claim 19 is a Markush claim. Markush claims are also discussed relative to unity of invention in MPEP § 1850:

**D. “Markush Practice”**

The situation involving the so-called Markush practice wherein a single claim defines alternatives (chemical or non-chemical) is also governed by PCT Rule 13.2. In this special situation, the requirement of a technical interrelationship and the same or corresponding special technical features as defined in PCT Rule 13.2, shall be considered to be met when the alternatives are of a similar nature.

When the Markush grouping is for alternatives of chemical compounds, they shall be regarded as being of a similar nature, where the following criteria are fulfilled:

(A) All alternatives have a common property or activity; and

(B)(1) A common structure is present, i.e., a significant structural element is shared by all of the alternatives; or

(C)(2) In cases where the common structure cannot be the unifying criteria, all alternatives belong to a recognized class of chemical compounds in the art to which the invention pertains.

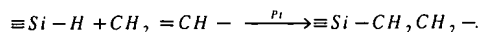
In paragraph (b)(1), above, the words “significant structural element is shared by all of the alternatives” refer to cases where the compounds share a common chemical structure which occupies a large portion of their structures, or in case the compounds have in common only a small portion of their structures, the commonly shared structure constitutes a structurally distinctive portion in view of existing prior art. The structural element may be a single component or a combination of individual components linked together. (Emphasis added.)

Here, all the claims possess the “significant structural features” recited above: a silsesquioxane structure of minimally 6 silicon atoms containing 67 mol percent or more of siloxy groups to the silicon atoms of which are directly bonded a functionalized phenyl group. The compounds further possess a common significant structural element: functionalized phenyl groups.

The Office’s reliance on lack of “corresponding technical features” is misplaced, first because the invention is not, as suggested in the Office Action, directed to “functionalized silsesquioxane nanoparticles,” but to “functionalized silsesquioxane nanoparticles of minimum content of 6 silicon atoms and minimally 67 mol percent of  $\text{RSiO}_{3/2}$  moieties where R is a functionalized phenyl group.”

Second, the special technical feature is the presence of the functionalized phenyl groups bonded to silicon atoms of the silsesquioxane structure. Such compounds are believed novel, and are not, for example, disclosed or suggested by U.S. 5,442,025.

U.S. 5,442,025 discloses organosilsesquioxanes containing at least one mesogenic group, which are prepared by hydrosilylating an Si-H functional silsesquioxane with an aliphatically unsaturated mesogenic group. Hydrosilylation cannot produce a structure where a phenyl group is attached directly to silicon; an intervening alkylene group must be present, minimally an ethylene group:



In contrast, in the compounds of the present invention, the phenyl group is directly linked to silicon.

Withdrawal of the election of species requirement is thus solicited.

The claims have been amended to correct minor errors associated with U.S. usage. No issue of new matter arises by virtue of this amendment.

Early favorable consideration is respectfully requested. It is noted that the International Preliminary Report has already been established and should therefore serve as the prior art search.

Respectfully submitted,

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